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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/462,911 02/15/00 ROUAU

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WASHINGTON DC 20006-1109

EXAMINER

MELLER, M

ART UNIT

PAPER NUMBER

1651

DATE MAILED:

01/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/462,911

Applicant(s)

ROUAU ET AL.

Examiner

Michael V. Meller

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1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of the term, "and/or" in claim 1 renders it indefinite. It is not understood how a composition can contain an enzyme, its substrate and the enzyme which made the first enzyme's substrate. Galactose oxidase acts on galactose. Why would one need the enzyme which makes galactose if galactose is already present to react with galactose oxidase ?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-10, 13-17, 20, 21, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Somers et al.

Somers teaches the use of galactose oxidase and galactose in dough making, preparing a bakery product and as an agent for improving dough, see abstract. Ascorbic acid is also used.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somers et al. in view of WO 96/39851 (herein after 96'), Banks et al. and Clark, Jr.

The teachings of Somers are above. Somers does not teach that an enzyme such as a hemicellulase is specifically used with the galactose oxidase, that lactose can

be the substrate for the galactose oxidase, that the galactose oxidase can come from a plant, fungi or bacterial species, or that the dough can be noodle or alimentary paste dough.

96' teaches improving the properties of a flour dough by adding an oxidoreductase capable of oxidizing maltose, see abstract and the claims. It also teaches that other enzymes such as cellulases, hemicellulases, xylanases, glucose oxidase, etc. can be added to the oxidoreductase capable of oxidizing maltose in order to improve the dough, see page 16. The reference also teaches that the dough can be a noodle or alimentary paste dough, see claims 9 and 10.

Banks teaches that dough compositions can contain sugars such lactose or galactose, see whole document, especially, col. 7, lines 3-34.

Clark teaches that galactose oxidase is commonly derived from microorganisms such as *Dactylium dendroides* , see col. 7, line 1-5.

It would have been obvious at the time the invention was made to add hemicellulases in the composition of Somers since both Somers and 96' teach that the enzymes are used as dough improving agents. All of the enzymes are expected to increase improving dough, thus one of ordinary skill in the art would have been clearly motivated to add enzymes which are known to improve dough properties.

Further, it would have been obvious to use noodle or alimentary dough since 96' clearly teaches that such doughs are commonly used in dough making. It also would have been obvious to use lactose in place of galactose for use as a substrate of galactose oxidase since Banks teaches that either sugar is known to be used in dough

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making and since Clark teaches that galactose or lactose is a typical substrate for galactose oxidase. It also would have been obvious to derive the galactose oxidase from a microorganism such as a plant, fungi or bacteria since Clark teaches that galactose oxidase is well known to be isolated from bacteria and since 96' isolates their enzyme also from algae. Further, it is well known in the art that enzymes from microorganisms have many beneficial properties over non-microorganism derived enzymes.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somers et al. in view of WO 94/28728 (herein after 94'), Banks et al., Clark, Jr., Gillmore et. al., and Yokotsuka et al.

The teachings of Somers are above. Somers does not teach that an enzyme such as a hemicellulase is specifically used with the galactose oxidase, that lactose can be the substrate for the galactose oxidase, that the galactose oxidase can come from a plant, fungi or bacterial species, or that the dough can be noodle or alimentary paste dough.

94' teaches improving the properties of dough or bread by adding a laccase, see abstract and the claims. It also teaches that other enzymes such as cellulases, hemicellulases, pentosanases, glucose oxidase, lipase, protease, alpha-amylase, etc. can be added to the laccase in order to improve the dough or bread, see page 5.

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Banks teaches that dough compositions can contain sugars such lactose or galactose, see whole document, especially, col. 7, lines 3-34.

Clark teaches that galactose oxidase is commonly derived from microorganisms such as *Dactylium dendroides* , see col. 7, line 1-5.

Gillmore teaches that alimentary paste and dough are one and the same, see col. 4, line 67-col. 5, line 25.

Yokotsuka teaches that noodle dough is routinely used in dough making, see col. 10, example 8.

It would have been obvious at the time the invention was made to add hemicellulases in the composition of Somers since both Somers and 94' teach that the enzymes are used as dough improving agents. All of the enzymes are expected to increase improving dough, thus one of ordinary skill in the art would have been clearly motivated to add enzymes which are known to improve dough properties.

Further, it would have been obvious to use noodle or alimentary dough since Gillmore and Yokotsuka clearly teach that such doughs are commonly used in dough making. It also would have been obvious to use lactose in place of galactose for use as a substrate of galactose oxidase since Banks teaches that either sugar is known to be used in dough making and since Clark teaches that galactose or lactose is a typical substrate for galactose oxidase. It also would have been obvious to derive the galactose oxidase from a microorganism such as a plant, fungi or bacteria since Clark teaches that galactose oxidase is well known to be isolated from bacteria and since 94' isolates their enzyme from *Rhizoctonia solani* (see page 9, under "Enzymes"). Further, it

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is well known in the art that enzymes from microorganisms have many beneficial properties over non-microorganism derived enzymes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Meller whose telephone number is 703-308-4230. The examiner can normally be reached on Monday thru Friday: 10:30am-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0294 for regular communications and 703-308-0294 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

MVM
January 29, 2001


DAVID M. NAFF
PRIMARY EXAMINER
ART UNIT 128 651